

rays of several Colours made as well by thin Plates or Bubbles, as by refractions of a Prism, have several degrees of refrangibility, whereby those of each order, which at their reflexion from the Plate or Bubble are intermixed with those of other orders, are separated from them by refraction, and associated together so as to become visible by themselves like Arcs of Circles. For if the rays were all alike refrangible, 'tis impossible that the whiteness, which to the naked sense appears uniform, should by refraction have its parts transposed and ranged into those black and white Arcs.

It appears also that the unequal refractions of different rays proceed not from any contingent irregularities; such as are veins, an uneven polish, or fortuitous position of the pores of Glass; unequal and casual motions in the Air or Æther; the spreading, breaking, or dividing the same ray into many diverging parts, or the like. For, admitting any such irregularities, it would be impossible for refractions to render those Rings so very distinct, and well defined, as they do in the 24th Observation. It is necessary therefore that every ray have its proper and constant degree of refrangibility connate with it, according to which its refraction is ever justly and regularly performed, and that several rays have several of those degrees.

And what is said of their refrangibility may be also understood of their reflexibility, that is of their dispositions to be reflected some at a greater, and others at a less thickness, of thin Plates or Bubbles, namely, that those dispositions are also connate with the rays, and immutable; as may appear by the 13th, 14th, and 15th

15th Observations compared with the fourth and eighth.

By the precedent Observations it appears also, that whiteness is a dissimilar mixture of all Colours, and that Light is a mixture of rays indued with all those Colours. For considering the multitude of the Rings of Colours, in the 3d, 12th and 24th Observations, it is manifest that although in the 4th and 18th Observations there appear no more than eight or nine of those Rings, yet there are really a far greater number, which so much interfere and mingle with one another, as after those eight or nine revolutions to dilute one another wholly, and constitute an even and sensibly uniform whiteness. And consequently that whiteness must be allowed a mixture of all Colours, and the Light which conveys it to the Eye must be a mixture of rays indued with all those Colours.

But further, by the 24th Observation, it appears, that there is a constant relation between Colours and Refrangibility, the most refrangible rays being violet, the least refrangible red, and those of intermediate Colours having proportionably intermediate degrees of refrangibility. And by the 13th, 14th and 15th Observations, compared with the 4th or 18th, there appears to be the same constant relation between Colour and Reflexibility, the violet being in like circumstances reflected at least thicknesses of any thin Plate or Bubble, the red at greatest thicknesses, and the intermediate Colours at intermediate thicknesses. Whence it follows, that the colorifique dispositions of rays are also connate with them and immutable, and by consequence that